



# **FOOT CARE COMPETENCIES TRAINING FOR SUPPORT PERSONNEL**

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# **Foot Care Competency Guideline**

- **Introduction**

- **The purpose of this training is to provide support personnel with a specialized, three tier program of instruction in providing foot care to patients with diabetes and assisting health care providers who care for them.**

# **Foot Care Competency Guideline**

- **The training advances with a higher level of specialized and detailed training as you move from basic to intermediate to advanced foot care.**
- **Training includes formal lectures and hands on experience.**

# **Foot Care Competency Guidelines**

- **Developed in a three tier program for foot care**
  - **Basic**
  - **Intermediate**
  - **Advanced**
- **Course syllabus**
- **Clinical supervision**

# **Foot Care Competency Guidelines**

- **Evaluations**
  - **Written exams**
  - **Direct observed performance on a specified number of patients**
  - **Level of competency training certificate depends on previous formal training and job duties**

# **Foot Care Competency Guidelines**

- **Management Plan**
  - Self-management education
  - Diagnostic studies if required
  - Foot wear recommendations, orthotic prescription if required
  - Nail, skin and ulcer care
  - Follow-up dates
    - Low Risk – 1 year
    - High Risk – 4 weeks

# **FOOT CARE COMPETENCY**

- **The purpose of this teaching plan is to provide clinical and didactic understanding to providers that directly correlate to the foot care competency level achieved.**

# **Foot Care Competencies**

- **More complex foot care skills are designated medical acts and licensed nursing personnel are advised to follow the guidance of the facility's locally approved foot care protocols**
- **Facility privileges are required for advanced foot care skills**



# Foot Risk Categories

**The level of foot care skills depends on the foot risk category of the patient and on the type of foot exam being done.**

- **Low Risk Category**

- **Intact protective sensation**
- **No history of foot ulcer**
- **No history of amputation**
- **Intact pulses**
- **Absence of foot deformities**

- **High Risk Category**

- **Absence of sensation AND/OR absence of pulses**
- **History of foot ulcer**
- **History of amputation**
- **Presence or absence of foot deformities**

# Foot Care Competencies

- **A visual foot exam is recommended at every visit with patients in the low risk category.**
- **A more comprehensive foot assessment including foot structure, skin integrity, vascular status and protective sensation is performed annually with patients considered to be low risk and as indicated with patients in the high risk category.**

# **BASIC FOOT CARE**

- **WHY IS BASIC FOOT CARE IMPORTANT?**
  - There were an estimated 86,000 diabetes-related lower extremity amputations in 2002 (1)
  - Approximately 85% of LEAs are preceded by foot ulcers (2,3)
  - The leading cause of amputations is diabetes

# Basic Foot Care

- **The goal of basic foot care is to prepare patients in the low risk category for a visual or more thorough examination.**

# **Basic Foot Care**

## **“Limb at Risk” Factors**

- **A history of diabetic foot ulcer (DFU) or partial foot/toe amputation**
- **History of Charcot Foot**
- **Foot deformity**
- **Neuropathy**
- **Peripheral vascular disease (PVD)**
- **Compromised skin integrity**
- **Compromised nutritional status**
- **Sacral decubitus ulcer**
- **Lower extremity cellulitis**
- **Poor glycemic control,  $HbA_{1c} > 8$**

# **Basic Foot Care**

## **“Limb at Risk” Factors**

- **Rheumatoid with difficulty ambulating**
- **Neuro-muscular disease, e.g. Spina Bifida**
- **Autoimmune diseases**
- **End stage renal disease**
- **Sclera derma**
- **Post burn**
- **Post surgical sites of lower extremity, e.g. post venous harvest site**
- **Deep vein thrombosis (DVT) history**
- **Symptoms of claudication**

# **Basic Foot Care Patient History**

- **Cover wide range of patient information including**
  - **Walking difficulties**
  - **Shoe problems**
  - **Pain**
  - **Social issues (e.g. smoking, alcohol use)**
  - **Age**
  - **Sex**
  - **Weight**
  - **Ethnicity**
  - **Glycosylated hemoglobin level**

# **Basic Foot Care**

## **Foot Evaluation**

- **Protective sensation**
- **Musculoskeletal deformities**
- **Vascular status**
- **Skin and nail condition**
- **Pedal pulses**
- **Sensory and motor foot exam**
- **Gait evaluation**



# **Basic Foot Care Skin Assessment**

- **Why is checking the skin so important?**
  - **First line of defense against infection**
  - **Provides sensory perception**
- **It is important to look at the skin for any redness, swelling, sores, corns, calluses, ulcers, fissures and drainage**
- **The most important skill is having the patient remove their shoes and socks**

# **Basic Foot Care Skin Assessment**

- **Why is skin temperature important?**
  - **Skin temperature ranges from cool to warm to the touch**
  - **At best, touching is a rough estimate of skin temperature but look for bilateral symmetry of skin temperature**
  - **Environmental conditions will affect skin temperature**
  - **A variance of 2-3 degrees may indicate infection and/or fracture**
  - **Using an Infrared Temperature Scanner for accurate assessment of temperature is invaluable**

# **Basic Foot Care Peripheral Vascular Assessment**

- **Skin**

- **Does the skin look pink or dusky?**
- **Is there hair on the toes?\***
- **Are the toenails brittle and thick?\***

- \* May indicate poor circulation. Brittle and thick toenails can be seen as a normal part of aging. Yellow discoloration occurs with fungal infections.

# **Basic Foot Care**

## **Peripheral Vascular**

### **Assessment**

- **Pulses should be palpated but can be difficult to find. If not felt, alert the nurse or Primary Care Manager(PCM)**
  - **Palpate the dorsalis pedis (Medial side of dorsum of foot with foot slightly dorsiflexed)**
  - **Palpate the posterior tibialis (Behind and slightly inferior to medial malleolus of ankle)**

# **Basic Foot Care Vascular Assessment continued**

- **Pulses**
  - Are hard to feel and may not be palpable in some well persons
- **Notify the clinic nurse or PCM if pulses cannot be felt.**
- **Nurse or PCM may then use a Doppler to assess pedal pulses**
  - Using the Doppler, note whether pulses are monophasic, biphasic or triphasic

# **Basic Foot Care Neurological Assessment**

- **The monofilament exam is done using a 5.07/10gm monofilament.**
- **Hold the monofilament by the handle**
- **Use a smooth motion to touch the skin on the foot for 1-2 seconds (See monofilament video regarding perpendicular motion)**
- **Touch along side of and not directly on any ulcer, callous or scar**

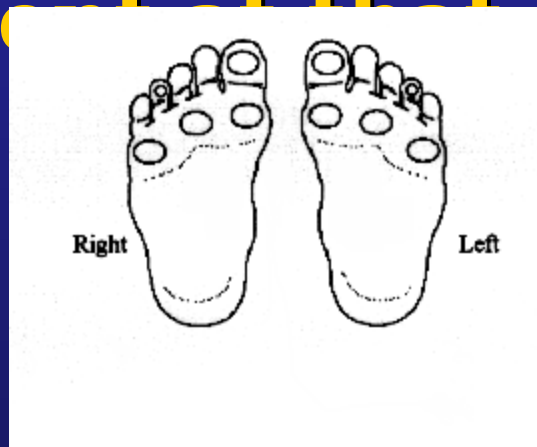
# **Basic Foot Care Neurological Assessment (cont.)**

- **Touch the foot to make the monofilament bend. Touch only once and do not drag the monofilament along the skin.**
- **Repeat the test if patient does not feel the monofilament.**

# Basic Foot Care

## Neurological Assessment

- Place a (+) in the circle if the patient can feel the monofilament at that site and a (-) if the patient cannot feel the filament at that site.



Bottom



# **Basic Foot Care Neurological Assessment**

- **Notify the nurse or PCM if the patient cannot feel the filament at any site.**
- **Give patients a basic instruction sheet which describes daily inspection of feet, proper hygiene practices, exercise, proper footwear, review of lifestyle habits such as tobacco cessation and when to report problems.**

# **Basic Foot Care**

- **Report any abnormal findings to the nurse or PCM**
- **Document results on MEDCOM Form 705r, side 2.**

# **Basic Foot Care Patient Education**

- **Examples of basic foot instruction can be found in the VA/DoD tool kit.**
- **Example can be found at:  
[http://www.ndep.nih.gov/diabetes/pubs/feet\\_broch\\_Eng.pdf](http://www.ndep.nih.gov/diabetes/pubs/feet_broch_Eng.pdf)**
- **Notify nurse or PCM if patient has any concerns regarding proper foot care.**

# **Intermediate Foot Care**

- **The goal of intermediate foot care is to assess patients more thoroughly for early detection of problems and to implement foot care maintenance and education.**

# **Intermediate Foot Care**

## **Skin, Nails and Foot**

### **Anatomy**

- **Skin**
  - **Protect against infection**
  - **Provide sensory perception**
  - **Repair surface wounds**
  - **Has three layers: epidermis, dermis and hypodermis**
- **Nails**
  - **Epidermal cells converted to hard plates of keratin**

# **Intermediate Foot Care**

## **Skin, Nails and Foot**

### **Anatomy**

- **Foot**

- **Tibiotalar joint consists of the articulation of the tibia, fibula and talus**
- **Protected by ligaments on the medial and lateral surfaces**
- **Tibiotalar joint permits flexion and extension**
- **Talocalcaneal(subtalar) joint and transverse tarsal joint permits pivot or rotation movement.**

# **Intermediate Foot Care**

- **Conduct an assessment of the feet to include:**
- **History of Present Problem**
  - **Any changes in the feet since last diabetes visit?**
  - **Any changes in the skin of the feet such as dryness, itching, sores, ulcers, corns, calluses, swelling, redness, or drainage?**

# **Intermediate Foot Care**

- **History of Present Problem**
  - **Any leg pain or cramps?**
  - **Does it occur with rest or activity? With elevation of legs? What makes it better or worse?**
  - **Any burning in feet? Is it continuous, induced by activity?**
  - **Any pain? Onset, location, duration, what makes it better or worse?**



# **Intermediate Foot Care**

- **History of Present Problem cont.**
  - Any skin changes, cold skin, hair loss or pallor?
  - Any history of injury or trauma?
  - Any history of ulcers?
- **Past Medical History**
  - Any past medical history of ulcers, changes in skin sensitivity?

# Intermediate Foot Care

- **Past Medical History cont.**
  - Any history of diminished sensitivity?
  - Any systemic problems such as thyroid disorders or skin problems?
  - History of chronic diseases (hypertension, coronary artery disease, thyroid?)
  - Any history of skeletal deformities or congenital anomalies?
  - Any surgeries?

# **Intermediate Foot Care**

- **Past Medical History**
  - Any change in activities of daily living or in the ability to walk?
- **Family History**
  - Any familial hair loss or coloration patterns?
  - Any family history of skin disorders?
  - History of chronic diseases (diabetes, hypertension, hyperlipidemia, heart disease or thyroid disease?)

# **Intermediate Foot Care**

- **Family History cont.**
  - Any family history of weakness or gait disorders?
- **Personal/Social History**
  - Skin care habits (kinds of soap and lotions used, home remedies)
  - Skin self-examination
  - Any difficulty trimming nails?

# **Intermediate Foot Care**

- **Personal/Social History cont.**
  - Any exposure to sun, chemicals?
  - What type of work is done, physical demands involving the feet?
  - Functional ability to walk, bath, dress, climb stairs, care for others, shop or fulfill work expectations?
  - Any use of mood altering drugs?

# **Intermediate Foot Care**

- **Personal/Social History cont.**
  - **Tobacco use? What type, how often, cessation attempts?**
  - **Alcohol use? What type, how often?**
  - **Exercise? What type, how often, what intensity and for how long?**
  - **Nutrition**
    - Type of diet
    - Weight gain or loss

# Intermediate Foot Care

- **Personal/Social History cont.**
  - Any recent psychologic or physiologic stress?
  - Sleep pattern?

# Intermediate Foot Care

- **Observe gait**
  - How does the patient walk, sit down, rise from sitting position, takes off coat, respond to directions?
  - Is there any limping, shuffling, staggering or foot dragging?
  - Observe for joint symmetry and alignment
- **Inspection of the feet to include:**
  - Shoes for rough spots, foreign objects or tears



# Intermediate Foot Care

- **Inspection of the feet to include:  
cont.**
  - Soles of shoes for worn down heels >30%
  - Socks or stockings for holes or pressure points
  - Skin of legs and feet for sores, calluses, ulcers, lesions, redness, drainage, edema, or dryness (to include between the toes, heels and bottom of feet)

# **Intermediate Foot Care**

- **Inspection of the feet to include:  
cont.**
  - Toenails for length, thickness and fungal infection
  - Feet and toes for deformities or bunions
  - amputation
- **Palpation**
  - Palpate the right and left posterior tibialis and dorsalis pedis pulses

# Intermediate Foot Care

- **Palpation cont.**
  - **Use Doppler to identify an arterial signal and measure ankle brachial index (ABI)**
  - **Skin temperature**
  - **Edema**
  - **Nails for capillary refill time**

# Intermediate Foot Care

- **Sensory Exam to include:**
  - **DTR's**
  - **Vibration**
  - **Position sense of toes**
  - **Monofilament exam**
    - See previous slide for instruction on monofilament exam

# Intermediate Foot Care

- **Interventions**

- **Hygiene**

- **Moisturizers**

- What to use and what not to use

- **Buffing and padding**

- Lecture and demonstration

- **Trimming and nail debridement**

- Lecture and demonstration

- Use of rotary tool or electric grinder

# **Intermediate Foot Care**

- **Documentation**
  - **Use of MEDCOM Form 705r**
- **Patient Teaching**
  - **Build on basic instruction sheet**
  - **Educate in self-care and when to report problems**
  - **Discuss lifestyle habits such as tobacco cessation**

# **Intermediate Foot Care**

- **Follow-up/Referral**
  - Refer patient with abnormal findings to a foot care specialist if they are at risk for complications or functional impairments (see DM CPG for high risk foot)
  - Refer for individual or comprehensive diabetes education

# **Advanced Foot Care**

- **The goal of advanced foot care is to provide prompt interventions for specific foot problems until the problem is resolved**
- **Clinical supervision of 120 hours or as determined by governing/hospital body**
- **Interventions governed by locally approved protocols**
- **Facility privileges required**



# **Advanced Foot Care**

- **Must demonstrate has basic and intermediate foot care skills to include a comprehensive history**
- **Diabetes foot complications**
  - **Pathophysiology of diabetes**
  - **Pathophysiology of foot complications**
    - Corns, calluses and ingrown toenails
    - PVD
    - Infections
    - Ulcers

# **Advanced Foot Care**

- **Principles of Infection Control**
- **Corns and Callous Debridement**
- **Wound Care Principles**
- **Wound Classification System**
- **Dressing and Dressing Changes**
- **Use of antibiotics and antifungals**
  - **Topicals and Oral agents**

# **Advanced Foot Care**

- **Anesthetic Administration**
  - **Anesthetic symptoms, complications and contraindications**
  - **Digital Blocks**
    - Understanding anatomy
    - Protocols
    - Therapy options
    - Indications and contraindications
    - Complications
    - Postprocedure therapy plan

# **Advanced Foot Care**

- **Anesthetic Administration**
  - **Oralets for administering treatments**
    - Debridement
    - Biopsy
    - Nail Removal

# **Advanced Foot Care**

- **Other issues related to the foot**
  - **Understanding strains and sprains of the ankle**
  - **Shoes\***
  - **Socks\***
  - **\*What's supportive and what's not**

# **Advanced Foot Care**

- **Diagnostic Studies**
  - **X-rays**
  - **Noninvasive vascular studies**
  - **Bone scans**
  - **Cultures**
  - **Labs**

# **Advanced Foot Care**

- **Documentation using MEDCOM Form 705r**
- **Patient Education**
- **Specialty Referrals**

# References

1. **Center for Disease Control and Prevention (CDCP), National Center for Chronic Disease Prevention and Health Promotion. The Burden of Heart Disease, Stroke, Cancer, and Diabetes, United States. In: The Burden of Chronic Diseases and Their Risk Factors. National and State Perspectives 2002.**  
[http://www.cdc.gov/nccdphp/burdenbook2002/02\\_diabetes.htm](http://www.cdc.gov/nccdphp/burdenbook2002/02_diabetes.htm)
2. **Pecoraro RE, Reiber GE, Burgess EM. Pathways to diabetic limb amputation. Basis for prevention. Diabetes Care 13: 513-52, 1990.**
3. **Larsson J, Agardh C, Apleqvist J, Stenstrom A: Long term prognosis after healed amputations in patients with diabetes. Clin Orthop 1998; 350:149-158.**



# **VA/DoD Clinical Practice Guideline Websites**

<http://www.qmo.amedd.army.mil/>

[http://www.oqp.med.va.gov/cpg/DM/DM\\_base/htm](http://www.oqp.med.va.gov/cpg/DM/DM_base/htm)

**For online information of clinical practice  
guidelines**

# QUESTIONS?

